

Amendments to the Claims

1. (Currently amended) A method for the formation of a selective rendering of body structures of an object to be examined from a primary image data set that is executed on a computer, the computer including computer memory that stores instructions that when executed on the computer, cause the computer to perform the steps of:

forming at least one pixel group (BG1-BG16) which comprises pixels from the primary image data set which are in conformity with predetermined filter criteria;

forming at least one pixel list by selection and/or deselection of at least one pixel group in conformity with predetermined criteria;

marking the pixels of the pixels groups of the at least one pixel list;

forming a filtered secondary image data set in which includes the marked pixels; and

forming the rendering from the secondary image data set, the marked pixels being rendered separately in highlighted or suppressed form;

wherein a plurality of pixel groups is defined, wherein a combination data tree is formed by assigning each pixel group (BG1-BG16) to a node (D1-D10, C1-C11, B1, B2, A1), and that the nodes are logically assigned to one another in conformity with a predetermined combination criterion and the selection and deselection are performed by selection and/or deselection of the nodes.

2. (Previously amended) The method as claimed in claim 1, in which a plurality of image regions is defined, wherein the pixels overlap at least partly.

3. (Cancelled)

4. (Currently amended) The method as claimed in claim 31, wherein the logic combination of two nodes takes place if all pixels of the pixel group associated with one node are also contained in the pixel group associated with the other node and if the pixel groups associated with the two nodes are not situated more than a predetermined distance apart.

5. (Currently amended) The method as claimed in claim 31, wherein the logic combination is performed by mutual combination of pixel groups in the form of a hierarchically structured combination tree, wherein:

each pixel group is assigned a node of a lower level (C1-C11);

at least one higher level (B1, B2) is defined;

nodes of a respective lower level are combined with a node of a hierarchically higher level if all pixels of the pixel group associated with the lower node are also contained in the pixel group associated with the node of the higher level, and/or

if the pixel groups associated with the nodes of the lower level are not situated more than a predetermined distance apart.

6. (Previously amended) The method as claimed in claim 5, wherein the formation of the filtered secondary image data set is performed by selection and deselection of nodes of different levels.

7. (Previously amended) The method as claimed in claim 1, wherein the combination of the pixels in the at least one pixel group is performed by means of the watershed transformation which comprises the following steps:

forming a gradient image data set in which each pixel is assigned a gradient image value which corresponds to the difference between the image value of this pixel in the primary image data set and the image value of the pixels surrounding this pixel; and

defining the pixel group by defining a gradient image region of neighboring pixels which are separated from one another by a local maximum of the gradient image values.

8. (Currently amended) A method for the formation of a selective rendering of body structures of an object to be examined from a primary image data set that is executed on a computer, the computer including computer memory that stores instructions that when executed on the computer, cause the computer to perform the steps of:

forming at least one pixel group (BG1-BG16) which comprises pixels from the primary image data set which are in conformity with predetermined filter criteria;

forming at least one pixel list by selection and/or deselection of at least one pixel group in conformity with predetermined criteria;

marking the pixels of the pixels groups of the at least one pixel list;

forming a filtered secondary image data set in which includes the marked pixels; and forming the rendering from the secondary image data set, the marked pixels being rendered separately in highlighted or suppressed form ~~The method as claimed in claim 2,~~

wherein a plurality of image regions is defined, wherein the pixels overlap at least partly; and wherein there is formed a plurality of hierarchically structured combination data trees whose nodes are logically combined in conformity with at least one combination criterion

if all pixels of the pixel group associated with the lower node are also contained in the pixel group associated with the node of the higher level; and

if the pixel groups associated with the two nodes are not situated more than a predetermined distance apart, that the combination criteria of the combination trees differ in respect of at least one combination criterion;

wherein the formation of the pixel list takes place by selection and deselection of nodes of at least one level in the combination trees.

9. (Currently amended) A device having a computer with computer memory, the computer memory storing instructions that when executed on the computer, cause the computer to perform a method for the formation of a selective rendering of body structures from a primary image data set, said method comprising the steps of:

forming at least one pixel group which contains pixels from the primary image data set which are in conformity with predetermined filter criteria;

forming at least one pixel list by selection and deselection of at least one pixel group in conformity with predetermined criteria;

marking the pixels of the pixels groups of the at least one pixel list;

forming a filtered secondary image data set which includes the marked pixels; and

forming the rendering from the secondary image data set, the marked pixels being rendered separately in highlighted or suppressed form;
wherein a plurality of image regions is defined, wherein the pixels overlap at least partly; and
wherein there is formed a plurality of hierarchically structured combination data trees whose nodes are logically combined in conformity with at least one combination criterion
if all pixels of the pixel group associated with the lower node are also contained in the pixel group associated with the node of the higher level; and
if the pixel groups associated with the two nodes are not situated more than a predetermined distance apart, that the combination criteria of the combination trees differ in respect of at least one combination criterion;
wherein the formation of the pixel list takes place by selection and deselection of nodes of at least one level in the combination trees.

10. (Cancelled)

11. (Previously Presented) The method as claimed in claim 1, wherein each of the at least one pixel group (BG1-BG16) has a different corresponding predetermined filter criteria.

12. (Previously Presented) The method as claimed in claim 1, wherein the pixels in the secondary image data set are marked by setting an associated image value to a predetermined, uniform image value.

13. (Previously Presented) The method as claimed in claim 12, wherein the predetermined, uniform image value is 0.

14. (Previously Presented) The method as claimed in claim 1, wherein the pixels are marked by reducing the associated image value by a predetermined absolute or relative amount.

15. (Previously Presented) The method as claimed in claim 1, wherein the pixels contained in the pixel list are marked in such a manner that the pixels are highlighted or diminished in color in the subsequent rendering.
16. (Previously Presented) The method as claimed in claim 1, wherein selection is the inclusion of a pixel group in a previously made selection.
17. (Previously Presented) The method as claimed in claim 1, wherein deselection is the removal of a pixel group in a previously made selection.
18. (Previously Presented) The method of claim 1, wherein the pixel list is an enumeration list which contains a reference to the selected and deselected pixels groups.
19. (Previously Presented) The method of claim 1, wherein the pixel list is an enumeration list which comprises all pixels selected by selection and deselection and a reference to the corresponding pixels.
20. (Previously Presented) The method of claim 1, wherein the pixel list is an enumeration list which comprises all pixels selected by selection and deselection and the image values and coordinates of the corresponding pixels.